

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. The amendment filed May 2, 2008 was entered. Claims 116-124 and new claims 125-130 are pending.

Claim Rejections - 35 USC § 102

3. New claims 125-130 are rejected under 35 U.S.C. 102(e) as being anticipated by Graham (U.S. Patent No. 6,573,099, issued June 3, 2003, filed June 19, 1998), for the reasons of record stated in the Office action mailed April 11, 2008 as this rejection was applied to claims 116-124. Applicants traverse in the papers filed May 2, 2008. Applicants' arguments were fully considered but were not fully persuasive.

The amendments to claims 116 and 120, requiring a composition containing SRMs to be introduced into cells, overcomes the rejection for claims 116-124, as Graham does not explicitly disclose introducing RNA molecules into cells. However, the method of new claims 125-130 differ from those of amended claims 116 and 120 in that at least one vector encoding the SRMs is introduced into cells. Applicants assume that the rejection would be applied to the new claims and present arguments (response, page 6, 1st and 2nd full paragraphs).

Applicants argue that the Office is improperly concluding that Graham is teaching that the expressed RNA molecules will be only 20-30 nucleotides long. Applicants argue that

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Graham teaches vectors that express much longer RNA sequences and makes it clear that it is only the portions of these longer RNAs that match the targeted gene that can be 20-30 nucleotides. Applicants argue that col. 6 of Graham indicates the preferred structural gene "components" of a synthetic gene comprise at least about 20-30 nucleotides in length, that these are structural gene "components" of a synthetic gene, not the synthetic gene itself, that the structural gene can have additional sequences. Applicants make similar arguments for the genetic constructs claimed in Graham (response, page 6, 3rd full paragraph and the paragraph bridging pages 6-7). However, Graham does not teach that this structural gene component must be more than 20-30 nucleotides in length, as Applicants argue, but rather at least about 20-30 nucleotides. This does not exclude this expressed component of the structural gene from being 20-30 nucleotides in length. Applicants continue, arguing that none of the examples provided in Graham teach the generation of short RNA molecules; that there is no suggestion in Graham that any RNA molecules that "consist of" 20-30 RNA molecules can be generated. Applicants point to col. 13, lines 48-52 as teaching a particularly preferred embodiment which will result in extensions in the RNA molecules formed in the transcripts, and argue that Graham is not concerned with generating discrete RNA molecules that consist of 20-30 nucleotides, as extensions effected by the terminator mandate longer sequences than 20-30 nucleotides (response, page 7, 2nd full paragraph). However, clearly Graham does encompass structural gene components that when expressed produce RNAs that are at least 20-30 nucleotides in length. Further, references, including patent references, are not limited to what is taught in working examples or preferred embodiments. A reference may be relied upon for all that it would have

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reasonably suggested to one having ordinary skill the art, including nonpreferred embodiments.

See MPEP 2123 I.

Applicants also argue that Graham fails to teach or suggest any advantages of using SRMs wherein the molecules are 20-30 nucleotides in length, namely avoiding the interferon response in mammalian cells, and to minimize so-called "off-site" or "off-target" effects (paragraph bridging pages 7-8). However, Graham does teach that RNA encoded by the structural gene reduces expression of the target gene. There is no requirement that the reference must discuss the interferon response or off-target effects.

5. Claims 116-124 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Fire et al. (U.S. Patent No. 6,506,559, issued January 14, 2003, filed December 18, 1998) in view of Graham (U.S. Patent No. 6,573,099, issued June 3, 2003, filed June 19, 1998), for the reasons of record stated in the Office action mailed April 11, 2008. Applicants traverse in the papers filed May 2, 2008. Applicants' arguments were fully considered but were not persuasive.

Applicants argue that because claim 1 of Fire recites the phrase "consisting essentially of" and dependent claim 10 recites "comprising", in relation to the double-stranded RNA molecule, that in claim 1 additional sequences can be present and does not imply that the RNA molecule itself can be shorter. Applicants argue that such an interpretation is supposedly consistent with the specification of Fire which, at col. 8, line 6, states that the length of the identical nucleotide sequences may be at least 25, 50, 100, 200, 300, or 400 bases. Applicants argue that column 8 does not state that the dsRNA itself may be at least 25 bases. Applicants argue that the claims must be interpreted in light of the specification (response, page 8 last

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paragraph to page 9, 4th full paragraph). However, claim 1 of Fire et al. does not place any limit on the size of the dsRNA molecule. To limit the size of the dsRNA molecule of patented claim 1 to being greater than 25 base pairs would be reading limitations of the specifications into the claims, which must be avoided. MPEP 2111; 2111.01. Further, Fire at col. 8, line 6 states that the length of the identical nucleotide sequences *may be* at least 25, 50, 100, 200, 300, or 400 bases (emphasis added). Because of the recitation, "may be", other lengths for the nucleotide sequence are not excluded.

Applicants also argue again argue that Graham does not teach expressed RNA sequences that repress a target gene of interest can be 20-30 nucleotides long; that Fire and Graham do not suggest a method of using actual short RNA molecules directly to silence genes. Applicants argue that each reference simply requires RNA molecules with regions of complementarity that are of relatively modest length (response, page 10, 3rd full paragraph to the paragraph bridging pages 10-11). Applicants' arguments are not found persuasive, for the reasons discussed above.

6. Claims 116-124 remain and claims 125-130 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al. (U.S. Patent No. 6,723,897, issued April 20, 2004, filed August 19, 1999), for the reasons of record stated in the Office action mailed April 11, 2008. Applicants traverse in the papers filed May 2, 2008. Applicants' arguments were fully considered but were not persuasive.

Applicants argue that Brown indicates that antisense expression of a sequence comprising at least 12 contiguous nucleotides can be used, but Brown does not mention any length of fragment for conducting co-suppression (response, page 11, penultimate paragraph). However,

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the recitation from col. 61-62 quoted by Applicant left out the recitation “such as by” before “antisense expression”. Antisense expression was an example. It would have been obvious to one of ordinary skill in the art that the sizes apply to nucleic acid molecules for co-suppression, as well. Applicants argue that col. 5, beginning at line 65, discuss constructs containing 100 base pairs corresponding with the gene to be silenced (response, page 12, 1st paragraph). However, col. 5, lines 50-58 teaches that nucleic acid segments are provided that comprise at least 12, 15, 18, 20, 24, 30, 40, or longer contiguous nucleotides of a sequence represented by recited sequence identifiers, and complements thereof.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

Any inquiry concerning this or earlier communications from the Examiner should be directed to Ashwin Mehta, whose telephone number is 571-272-0803. The Examiner can normally be reached from 8:00 A.M to 5:30 P.M. If attempts to reach the Examiner by telephone

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are unsuccessful, the Examiner's supervisor, Anne Marie Grunberg, can be reached at 571-272-0975. The fax phone numbers for the organization where this application or proceeding is assigned are 571-273-8300. Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

July 28, 2008

/Ashwin Mehta/
Primary Examiner, Art Unit 1638